Moreover, we cannot have $\mu_i = -1$ because that would mean by (3) that

$$0 = \bar{z}_i' A_1 z_i + \bar{z}_i' A_2 z_i = \bar{z}_i' A z_i .$$

Relation (12) thus implies

$$1 - | \mu_i |^2 > 0 \tag{14}$$

i.e. $| \mu_i | < 1$ as was to be proved.

The part of the theorem giving the sufficient condition was already obtained by L. Seidel [1] and G. Temple in a somewhat more indirect fashion.

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SOME RECURRENCE FORMULAE IN THE INCOMPLETE BETA FUNCTION RATIO

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1. Introduction. It is well known that the incomplete beta function ratio, defined by

$$I_x(p, q) = \frac{B_x(p, q)}{B(p, q)}, \tag{1}$$

where

$$B_x(p, q) = \int_0^x x^{p-1}(1 - x)^{q-1}\, dx, \tag{2}$$

and

$$B(p, q) = B_1(p, q), \tag{3}$$